

Patent claims US:

1. An erythropoietin (EPO) peptide which essentially comprises amino-acid positions 1 to 35 (P4), 7 to 22 (P4/1), 44 to 78 (P2/1), 52 to 63 (P3/1), 74 to 109 (P1), 84 to 95 (P1/1), 93 to 137 (P5), 110 to 123 (P5/1), 142 to 166 (P2) or 152 to 166 (P2/1) in accordance with the numbering of the amino-acid positions of natural EPO.
2. An EPO peptide as claimed in claim 1, which is of synthetic origin.
3. An EPO peptide as claimed in claim 1, which has one of the following amino-acid sequences:

P1 VLRGQALLVNSSQWPEPLQLHVDRKAVSGLRSLTLL;
P1/1 SSQWPEPLQLHV;
P3 NEMITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA;
P3/1 KRMEVGQQAVEV;
P4 APPRLICDSRVLERYLLEAKEAEENITTGCAEHCSL;
P4/1 CDSRVLERYLLEAKEAE;
P5 LHVDRKAVSGLRSLTLLRALRAQKEAISPPDAASAAPLRTITADT;

or

P5/1 RALRAQKEAISPPD.

4. An EPO peptide as claimed in claim 1, which has one of the following amino-acid sequences:

P2 FRKLFRVYSNFLRGKLKLYTGEACRTGDR; or
P2/1 KLKLYTGEACRTGDR.

5. The use of EPO peptides as claimed in claim 1 for the preparation of epitope-specific anti-EPO antibodies, an epitope being defined as being composed of one or more peptides, or one or more sections of peptide sequences.
6. An epitope-specific anti-EPO antibody, which is directed against an EPO peptide as claimed in claim 1, and/or directed against an EPO epitope according to claim 5.

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Sub B1
7. An epitope-specific anti-EPO antibody as claimed in claim 6, which is a monoclonal antibody.

8. An epitope-specific anti-EPO antibody as claimed in claim 6, which neutralizes the biological activity of EPO.

sub D2
9. An anti-idiotypic antibody against the binding region of an EPO-neutralizing antibody as claimed in claim 8.

Sub C2
10. The use of the epitope-specific anti-EPO antibodies as claimed in claim 6 for purifying EPO, EPO derivatives or EPO peptides.

Sub B1
11. A diagnostic aid containing an antibody as claimed in claim 6 for the detection of EPO.

Sub C2
12. A diagnostic aid containing an EPO peptide as claimed in claim 1 for the detection of anti-EPO antibodies.

13. A pharmaceutical containing at least one EPO peptide as claimed in claim 1 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

14. A pharmaceutical containing an epitope-specific anti-EPO antibody as claimed in claim 8 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

Sub B3
15. A pharmaceutical containing an anti-idiotypic antibody as claimed in claim 9 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

16. A diagnostic aid containing an anti-idiotypic antibody as claimed in claim 9 for the detection of neutralizing antibodies or EPO receptors.

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